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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Seventh Semester, B.E. - Electrical and Electronics Engineering

Semester End Examination; February - 2022

Artificial Neural Network and Artificial Intelligence

Time: 3 hrs *Max. Marks: 100*

Course Outcomes

The Students will be able to:

CO1: To get the knowledge of different terminologies used and Analyze the different learning rules in ANN.
CO2: To Understand the architecture and algorithm of various neural networks.
CO3: Analyze the feedback and feed forward network in ANN.
CO4: To get the basic knowledge of Learning vectors and organizing maps.
CO5:To get the knowledge of different terminologies used in AI

Note: ***I) PART - A*** *is compulsory.* ***Two*** *marks for each question.*

II) PART - B*: Answer any* ***Two*** *sub questions (from a, b, c) for Maximum of* ***18 marks*** *from each unit.*

Q. No.	Questions	Marks	BLs	COs	POs
	I : PART - A	**10**			
I a.	A 3-input neuron is trained to output a zero when the input is 110 and a one when the input is 111. After generalization the output will be zero when and only when the input is _____.	2	L2	CO1	PO2
b.	A 4-input neuron has weights 1, 2, 3 and 4 the transfer function is linear with the constant of proportionality being equal to 2. The inputs are 4, 10, 5 and 20 respectively. The output will be _____.	2	L1	CO2	PO2
c.	Distinguish between a feed forward network and a recurrent network.	2	L1	CO3	PO2
d.	What is active and passive reinforcement learning?	2	L1	CO4	PO2
e.	A perceptron is _____.	2	L1	CO5	PO2
	II : PART - B	**90**			
	UNIT - I	**18**			
1 a.	Describe the architecture and the computational task of the NetTalk Neural Network.	9	L2	CO1	PO2
b.	What is Artificial Neural Network? Why is it used for?	9	L2	CO1	PO2
c.	Distinguish between Biological Neural Network and Artificial Neural Network.	9	L2	CO1	PO2
	UNIT - II	**18**			
2 a.	Develop an Adaline learning algorithm.	9	L2	CO2	PO2
b.	Develop a Perceptron training algorithm.	9	L2	CO2	PO2
c.	State the training algorithm of the Hebbnet with its architecture.	9	L2	CO2	PO2

Contd....2

	UNIT - III	**18**			
3 a.	What are Radial Basic Functions (RBFs)?	9	L2	CO3	PO2
b.	What is bidirectional associative memory? Explain its working.	9	L2	CO3	PO2
c.	What are Feed Forward Network? Explain the architecture of Back Propagation Network (BPN).	9	L2	CO3	PO2
	UNIT - IV	**18**			
4 a.	Describe the competitive process of the self organizing map algorithm.	9	L2	CO4	PO2
b.	Write a note on Kohonen algorithm.	9	L2	CO4	PO2
c.	Describe Learning Vector Quantization (LVQ) architecture and the training algorithm.	9	L2	CO4	PO2
	UNIT - V	**18**			
5 a.	Differentiate Blind search and Heuristic search.	9	L2	CO5	PO2
b.	Give the procedure of IDA* search.	9	L2	CO5	PO2
c.	Define artificial intelligence. Differentiate between soft computing and hard computing.	9	L2	CO5	PO2

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